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Mental Health

# THE BRIDGE

November 2020

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## Dr Stephanie Lewis

*The Bridge* Editor

Welcome to the November 2020 issue of *The Bridge*. The research featured in this issue covers a wide range of topics relevant to our work with young people, including neurodevelopmental, emotional, and behavioural disorders, their comorbidity, and their links with functioning and quality of life. To reveal new insights about these topics, the studies used uniquely informative designs, such as longitudinal twin designs, and sophisticated analytical techniques, such as machine learning. I hope you enjoy reading about this excellent research.

At ACAMH we've also been making plans for an exciting new initiative to learn from research...

### **CAMHS around the Campfire**

ACAMH is teaming up with the Mental Elf to bring you CAMHS around the Campfire, an online journal club for people interested in youth mental health research. Each meeting we'll get together with subject experts to discuss new research and its implications for young people and clinical practice.

Our first meeting will be held in early December, when we'll focus on Faith Orchard and colleagues' study that's featured in this issue of *The Bridge*. Faith's research found that young people who reported poor sleep were at greater risk of developing anxiety and depression later in adolescence and young adulthood. We'll discuss the strengths and limitations of the study, and consider how the findings might inform strategies to prevent anxiety and depression in young people.

Read about Faith Orchard and colleagues' study in this issue of *The Bridge* in the article titled 'Insufficient sleep during adolescence might pose a risk for later depression and anxiety'.

More information about this first CAMHS around the Campfire, including how to register, will be available soon from ACAMH and the Mental Elf.

ACAMH: website [www.acamh.org](http://www.acamh.org), twitter [@acamh](https://twitter.com/acamh)

The Mental Elf: website [www.nationalelfservice.net/mental-health](http://www.nationalelfservice.net/mental-health), twitter [@Mental\\_Elf](https://twitter.com/Mental_Elf)

Looking forward to joining many of you there!

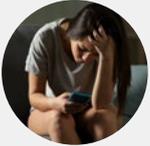
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### Dr Jessica K. Edwards

Research highlights in this edition are prepared by Dr Jessica K. Edwards. Jessica is a freelance editor and science writer, and started writing for 'The Bridge' in December 2017.





# A machine learning approach identifies unique predictors of borderline personality disorder

By Dr. Jessica Edwards

Researchers in the USA have identified critical predictors of borderline personality disorder (BPD) in late adolescence, using a machine learning approach. Joseph Beeney and colleagues harnessed data from a large, prospective, longitudinal dataset of >2,400 girls who were evaluated yearly for various clinical, psychosocial and demographic factors. Their optimal predictive model included 19 predictors of a possible 128. The top predictors included mood and anxiety symptoms, poor self-control, harsh punishment and poor functioning. These predictors were relatively stable across three key developmental periods — late childhood, early-adolescence and mid-adolescence — suggesting that BPD risk factors do not markedly change over time.

“A key take away from these findings is that there are quite a few early signs of BPD that might signal a need for children and adolescents to engage in preventative treatment”, explains Beeney. “While we don’t have enough data on what might alter the course of BPD in those with these early risk factors, knowing which risk factors are most influential can help us design better treatments and allow us to intervene early”.

Another important finding from this study was that the predictive model for BPD did not substantially overlap with models for depression or conduct disorder (CD). For example, anxiety was a major predictor of BPD symptoms while sensation seeking was a major predictor of CD symptoms. The researchers also found key differences in parenting risk factors between these disorders. The hope is that these data and future research might help direct clinicians towards important risk factors unique to each disorder that might be effectively targeted during treatment.

“Being able to differentiate between early risk for symptoms of BPD, CD and depression in adolescence is important”, says Beeney. “Although recent research has suggested that a set of common factors might increase the risk for all psychopathology, our findings suggest that the most important factors for each disorder could be distinct”.

## Referring to:

*Beeney, J.E., Forbes, E.E., Hipwell, A.E., Nance, M., Mattia, A., Lawless, J.M., Banihashemi, L. & Stepp, S.D. (2020), Determining the key childhood and adolescent risk factors for future BPD symptoms using regularized regression: comparison to depression and conduct disorder. J. Child Psychol. Psychiatr. doi: 10.1111/jcpp.13269.*

## Glossary:

### **Borderline personality disorder:**

according to the DSM-5, BPD is diagnosed based on: (1) a pervasive pattern of instability of interpersonal relationships, self-image, and affects; and (2) marked impulsivity beginning by early adulthood and present in various contexts.

**Conduct disorder (CD):** CD is characterized by behaviour that violates either the rights of others or major societal norms, such as aggression, destruction of property or theft. To be diagnosed with conduct disorder, symptoms must cause significant impairment in social, academic or occupational functioning. The disorder is typically diagnosed prior to adulthood.



# Depressed mothers and their offspring differ in terms of health risk profiles and allostatic load

By Dr. Jessica K Edwards

Allostatic load is essentially the “wear and tear” that accumulates in the body in individuals exposed to chronic stress. Because some patients with psychiatric disorders have a shorter lifespan than their healthy counterparts,<sup>1</sup> some researchers have suggested that there might be a link between disorders such as depression and increased allostatic load.<sup>2</sup>

Earlier this month, researchers in the USA published the results of a preregistered case-control study that aimed to see if depressed mothers and their children exhibit increased allostatic load and if so, how this might differ. Benjamin Nelson and colleagues recruited 180 mothers (50% depressed, 50% nondepressed) and their children (aged 11-14 years) and measured various indices of allostatic load, including cardiac control, inflammation, cellular aging, and behaviour. They found that while both depressed mothers and their children indeed exhibited higher allostatic load, this load differed in terms of comorbid mental and physical health risk profiles. Specifically, the depressed mothers in this cohort tended to exhibit an elevated resting heart rate and decreased heart rate variability, while their children exhibited greater mental health symptoms, elevated heart rate, and accelerated biological (cellular) aging.

These data imply that maternal depression is linked with increased allostatic load in mothers and their adolescent children, which might increase the risk of mental and physical health disorders in these children. Further work is now necessary to determine why some biological systems are more impacted than others, and how we might prevent and/or intervene in at-risk families to reduce allostatic load and promote mental and physical health.

## Referring to:

Nelson, B.W., Sheeber, L., Pfeifer, J. & Allen, N.B. (2020), *Psychobiological markers of allostatic load in depressed and nondepressed mothers and their adolescent offspring*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.12364.

## References:

<sup>1</sup> Walker, E.R. et al. (2015). *Mortality in mental disorders and global disease burden implications*. *JAMA Psychiatry*. 72, 334–341. doi: 10.1001/jamapsychiatry.2014.2502.

<sup>2</sup> Ulmer-Yaniv, A. et al. (2018). *Maternal depression alters stress and immune biomarkers in mother and child*. *Depress. Anxiety*. 35, 1145–1157. doi: 10.1002/da.22818



# Utilization of peer-supported youth hotlines is on the rise

By Dr. Jessica Edwards

New data suggest that there has been a significant increase in the use of a peer-supported youth hotline between 2010 (~8,000 annual contacts) and 2016 (>12,000 annual contacts). Berit Kerner and colleagues evaluated >67,000 contacts made to a hotline based in Los Angeles, USA. They found that most contacts to this hotline seemed to be made by 15-16-year-old girls, but children <13 years old were also increasingly making contact. Calls to the hotline declined over the study period, while email and text-message-based contact increased. The top reasons for youth to reach out to this hotline in 2016 included stress and anxiety (~20%), closely followed by sadness and depression (~17%), suicidal ideation (~14%), and self-harm (~8%).

The researchers did not have access to complete demographic information for all the teenagers contacting the hotline. As such, questions remain as to whether reasons for contact differ according to race, sex, or age. In addition, it is not known whether those using the hotline also received mental health support in other forms. Nevertheless, the data clearly show that the overall number of adolescents using this particular peer-supported youth hotline for mental-health support has substantially increased. The researchers therefore propose that the hotline model might be able to identify youth at risk for depression, self-harm and suicide. It might also serve in prevention and early intervention. To achieve these aims, further work is needed to determine how these hotlines might be effectively linked up with other mental health resources.

## Referring to:

Kerner, B., Carlson, M., Eskin, C.K., Tseng, C-H., Ho, J-M G-Y., Zima, B. & Leader, E. (2020), Trends in the utilization of a peer-supported youth hotline. *Child Adolesc. Ment. Health*. doi: [10.1111/camh.12394](https://doi.org/10.1111/camh.12394).



## Are autistic behaviours a trait or a state of anorexia nervosa?

By Dr. Jessica Edwards

Anorexia nervosa (AN) and autism spectrum disorder (ASD) seem to co-occur more frequently than would be expected by chance.<sup>1,2</sup> Yet because most studies investigating the nature of this co-occurrence have used a retrospective design, where the data are prone to recall bias, we don't know whether the elevation of autistic traits in AN is present from childhood or rather from AN onset. "We wanted to address this knowledge gap and see if we could capture the link between AN and autism prospectively", says lead author Lisa Dinkler. "We therefore investigated whether autistic traits in individuals with later AN were already elevated in childhood."

Dinkler *et al.* analysed data from a population-based sample of almost 6,000 individuals enrolled in the Child and Adolescent Twin Study in Sweden. Parent reports of autistic traits were collected at ages 9 and 18 years, and clinical diagnoses of AN and ASD were extracted from the Swedish National Patient Register. Parent reports for AN treatment were also obtained. With these data in hand, Dinkler and colleagues compared whether those with and without AN differed in autistic traits at ages 9 and 18 years — before and after the first diagnosis of AN.

Surprisingly, the researchers did *not* find support for elevated childhood autistic traits at age 9 years in individuals with later AN. However, at age 18 they found an interesting result: a marked elevation in autistic traits only in girls with acute AN, but not in girls with previous AN.

“Our results do not necessarily mean that the association of AN with autism is less strong than previously thought”, proposes Dinkler. “There are various possible explanations, including one based on successful camouflaging behaviour exhibited by children with autism”. By this hypothesis, the researchers propose that the children in their cohort might have unrecognized ASD at age 9 because they camouflaged their autistic traits. The emergence of acute AN later in life might have depleted resources available to camouflage, making these originally subtle autistic traits more noticeable. Upon resolution of AN, such camouflaging behaviours might return. This paradigm might explain why the researchers only found an increase in autistic traits in girls aged 18 with acute but not with previous AN.

Going forward, Dinkler and colleagues propose that screening for autism by parent report might not be sensitive enough to detect potential elevations of autistic traits in girls who later develop AN. “The assessment of autistic traits in early development is absolutely crucial when assessing autism in individuals with AN”, says Dinkler. “We also need more specific instruments to capture autism in young girls, especially those who are cognitively able.”

*“Our results do not necessarily mean that the association of AN with autism is less strong than previously thought. There are various possible explanations, including one based on successful camouflaging behaviour exhibited by children with autism.”*

### Referring to:

Dinkler, L., Taylor, M.J., Råstam, M., Hadjikhani, N., Bulik, C.M., Lichtenstein, P., Gillberg, C. & Lundström, S. (2020), *Anorexia nervosa and autism: a prospective twin cohort study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13265.

### References:

- <sup>1</sup> Westwood, H. et al. (2017), *Autism spectrum disorder in anorexia nervosa: An updated literature review*. *Curr. Psychiatry Rep.* 19, 41. doi: 10.1007/s11920-017-0791-9.
- <sup>2</sup> Koch, S.V. et al. (2015). *Autism spectrum disorder in individuals with anorexia nervosa and in their first- and second-degree relatives: Danish nationwide register-based cohort-study*. *Br. J. Psychiatry.* 206, 401–407. doi: 10.1192/bjp.bp.114.153221.

### Glossary:

**Camouflaging behaviour:** a coping strategy that aims to hide overt autistic behaviours, or purposely perform behaviours thought to be neurotypical, to fit or blend in socially. Some affected children are so good at camouflaging that they evade diagnosis until adulthood. While camouflaging might help some children make friends and engage in social interactions, it can be physically and mentally exhausting.



# Are psychotic experiences linked with early school performance?

By Dr. Jessica Edwards

Lisa Steenkamp and colleagues in The Netherlands and the USA have studied whether psychotic experiences are associated with childhood functional impairments, particularly regarding school performance. To do so, they assessed psychotic experiences in a cohort of >2,600 children (enrolled in the population-based Generation R Study) using self-reports on hallucinations at age 10 years. Then, they assessed school performance based on standardized national school test results at age 12 years.

After adjusting for sociodemographic characteristics, maternal and childhood intelligence (at age 6 years), and co-occurring psychopathology at age 10 years, they found that indeed, psychotic experiences were prospectively associated with poorer school performance scores. They also found an association specifically with poorer language and mathematics subscale scores. However, the effect sizes were relatively small, and the associations did not remain after adjusting for attention problems.

These findings suggest that psychotic experiences might be associated with childhood functional impairments. Steenkamp *et al.* thus propose that longitudinal studies further explore the relevance and nature of the relationship between psychotic experiences and school performance. The role of attention problems in this relationship also warrants further analysis.

## Referring to:

Steenkamp, L.R., Bolhuis, K., Blanken, L.M.E., Luijk, M.P.C.M., Hillegers, M.H.J., Kushner, S.A. & Tiemeier, H. (2020), *Psychotic experiences and future school performance in childhood: a population-based cohort study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13281.



# How useful are Ofsted ratings for predicting educational outcomes and wellbeing at secondary school?

By Dr. Jessica Edwards

“The factors parents care about most when selecting a school – their child’s educational achievement and wellbeing – are negligibly predicted by Ofsted ratings”, says Sophie von Stumm, lead researcher of a new study published in the *Journal of Child Psychology and Psychiatry*.

von Stumm and colleagues came to this conclusion after assessing whether secondary school quality – as determined by inspection ratings made by the Office for Standards in Education, Children’s Services and Skills (Ofsted) – is associated with a student’s educational achievement, well-being and school engagement. They accessed academic performance data at age 11 and GCSE grades at age 16 from >4,300 English students who completed measures of well-being and school engagement at age 16. They found that Ofsted ratings accounted for 4% of the variance in students’ educational achievement at age 16. This percentage dropped to just 1% after accounting for performance at age 11 and family socioeconomic status. Ofsted ratings were also only weak predictors of wellbeing and school engagement.

“If Ofsted ratings don’t predict students’ achievement and wellbeing, we need to reconsider just how helpful they are in general”, says von Stumm. “What’s more, parents often go to great lengths to secure a place at an ‘outstanding’ school for their children – either by moving to a new house or commuting long distances. Our research suggests these investments don’t really achieve what they are aimed at – good grades and well-being for children.”

Going forward, von Stumm *et al.* query how useful Ofsted ratings are as a guide for parents and students. In addition, they note that the Ofsted inspection itself confers a high level of stress to teachers and other school staff. Ultimately, they propose that parents would be ill-advised to draw conclusions about individual student outcomes based on these inspection reports.

## Referring to:

von Stumm, S., Smith-Woolley, E., Cheesman, R., Pingault, J-P., Asbury, K., Dale, P.S., Allen R., Kovas, Y. & Plomin, R. (2020), *School quality ratings are weak predictors of students’ achievement and well-being*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13276.

# Children with low language ability are at risk of a poor health-related quality-of-life

By Dr. Jessica Edwards

Ha Le and colleagues have examined the association between low language ability and health-related quality-of-life (HRQoL) in an Australian community-based cohort of 1,910 children assessed throughout childhood. They measured HRQoL using parent reports when children were 4 to 13 years old, and measured language ability using the Clinical Evaluation of Language Fundamentals (CELF) at ages 4, 5, 7 and 11 years. During data analysis, the researchers estimated the cross-sectional and longitudinal associations between language ability and HRQoL, and calculated the associations between their trajectories during childhood.

They found that children with low language skills had a markedly lower HRQoL than those with typical language skills. Furthermore, high language scores were associated with better HRQoL, particularly in social and school functioning. When breaking down the data, they observed three trajectories for HRQoL in their cohort: a stable-high HRQoL group comprising 51% of children, a reduced with a slow decline HRQoL group comprising 40%, and a low and rapid decline HRQoL group comprising 9%. Amongst children with a low language score trajectory, 60% fell into the latter two HRQoL groupings, meaning that they were on a declining trajectory for HRQoL.

While this study included a large, community-based sample with repeated outcome measures made over 9 years, the use of parent-proxy reports on HRQoL is an important limitation. However, these data preliminarily highlight a need to address the functional impact of low language ability during childhood. Future work is warranted to identify factors contributing to a low HRQoL in children with low language abilities.

## Referring to:

Le, H.N.D., Mensah, F., McKean, C., Sciberras, E., Bavin, E.L., Reilly, S. & Gold, L. (2020), *Health-related quality of life of children with low language from early childhood to adolescence: results from an Australian longitudinal population-based study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13277.





# Is aggression linked with academic performance in young people?

By Dr. Jessica Edwards

A new study published in the *Journal of Child Psychology and Psychiatry* has investigated the association between aggression and academic performance in >27,000 young people enrolled in four twin cohorts comprising the ACTION consortium. These twin studies had collected comprehensive, individual-level data on aggression at ages 7-16 years, based on parental, teacher or self-reports. They also obtained information on academic performance, measured by teacher-rated grades at age 12-14 years or standardized test scores at age 12-16 years. Eero Vuoksima and colleagues analysed this data and performed a meta-analysis to estimate the correlation between aggression and academic achievement.

In their between-family analyses, the researchers found a significant, negative association between aggression and academic performance. That is, young people who were more aggressive had poorer academic performance than those who were less aggressive. This association remained regardless of age, the instrument used to assess aggression, the person rating aggression and the measure of academic performance.

Within-family analyses were also performed. These analyses ask: do more aggressive co-twins have poorer academic performance compared to their less aggressive co-twin? The researchers found a significant correlation within twin pairs, indicating that aggression is associated with academic performance independent of shared environmental and genetic influences. However, this relationship was weaker within monozygotic twin pairs (who share all their segregating genes) than dizygotic twin pairs (who share half their segregating genes), suggesting that the association was partly explained by genetic effects.

Despite each cohort being conducted in different European countries and using different measures of aggression, the results were consistent across cohorts involved in this study. These findings further support the robustness of the negative association between aggression and academic performance. Further studies that also include a measure of childhood cognitive ability are needed to determine whether early cognitive ability might predict academic performance and whether aggression might have any additive or mediating effect on this association.

## Referring to:

Vuoksima, E., Rose, R.J., Pulkkinen, L., Palviainen, T., Rimfeld, K., Lundström, S., Bartels, M., van Beijsterveldt, C., Hendriks, A., de Zeeuw, E.L., Plomin, R., Lichtenstein, P. Boomsma, D.I. & Kaprio, J. (2020), *Higher aggression is related to poorer academic performance in compulsory education. J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13273.



# Insufficient sleep during adolescence might pose a risk for later depression and anxiety

By Dr. Jessica Edwards

A new study published in the *Journal of Child Psychology and Psychiatry* has found that young people who have poor sleep quality and quantity might be at risk of poor mental health later in adolescence and early adulthood. The study, conducted by Faith Orchard and colleagues, aimed to understand whether specific aspects of sleep are associated with current anxiety and depression, or are risk factors for future anxiety and depression. To do so, they studied a large cohort of about 4,700 teenagers. First, they investigated cross-sectional associations of self-reported sleep patterns and quality with anxiety and depression at age 15. Then, they evaluated longitudinal associations of these age-15 sleep measures with age-17, 21 and 24 anxiety and depression.

Teenagers with no anxiety or depression reported around 8 h sleep per night on a weeknight, and >9.5 h sleep on weekends, at age 15. In comparison, those with depression had more difficulties with both their sleep patterns (including less sleep) and sleep quality at age 15, whereas those with anxiety had difficulties with sleep quality but not patterns. Strikingly, anxiety and depression in later adolescence and early adulthood were predicted by some aspects of sleep patterns (less sleep on school nights) and sleep quality (daytime sleepiness, night waking, and perception of whether they had enough sleep) at age 15. This was the case even after accounting for age-15 anxiety and depression.

If confirmed, these findings have various implications for how we might better support young people. “Given that young people with depression seem to experience very poor sleep, current interventions for depression might benefit from an additional focus on managing sleep”, says Orchard. “In addition, as a range of sleeping difficulties were significant predictors of future anxiety and depression, even amongst young people not currently experiencing mental health problems, our findings would also suggest that all teenagers with sleep difficulties would benefit from receiving support for their sleep both to improve their current wellbeing but to potentially prevent long-term difficulties with anxiety and depression”.

Studies are now warranted to confirm these findings that have been collected based only on self-reporting of sleep. Future research is also required to examine potential sleep interventions, and to better understand how and when it is optimal to intervene.

## Referring to:

Orchard, F., Gregory, A.M., Gradisar, M. & Reynolds, S. (2020), *Self-reported sleep patterns and quality amongst adolescents: cross-sectional and prospective associations with anxiety and depression*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13288.



# Paediatric anxiety disorders confer a considerable public health burden

By Dr. Jessica Edwards

Anxiety disorders usually begin in childhood or adolescence and are the most common mental health condition across the life span.<sup>1,2</sup> Consequently, intense research efforts are focused on delineating the underlying mechanisms of paediatric anxiety so that we can better identify those at risk and intervene early. Earlier this year, Jeffrey Strawn and colleagues compiled a Research Review for the *Journal of Child Psychology and Psychiatry* discussing the substantial progress made over the past decade with regards to understanding the epidemiology, neurobiology and treatment of anxiety disorders in childhood and adolescence.

Strawn *et al.* first outline the epidemiology of specific phobia, separation anxiety disorder, social anxiety disorder, generalized anxiety disorder, and panic disorder — highlighting the key characteristics, mean age of onset and prevalence. Then, they describe various risk factors for anxiety disorders — including cognitive, behavioural, family and wider environmental risk factors. They also discuss how some of these risk factors might be linked to neurobiology.

Next, Strawn *et al.* give a clear and concise explanation of the neurobiology of anxiety disorders, drawing on findings made from structural and functional neuroimaging, neurocircuitry and neurochemistry analyses. They found from their literature review that structural and functional alterations in the fronto- limbic system (including the amygdala, which is involved in fear processing) are consistently seen in young people with or at risk of developing anxiety disorders. But despite this knowledge, our understanding of developmental neurobiology and how it can predict risk of developing anxiety or treatment responses is still in its infancy.

Finally, Strawn and colleagues outline the results of dozens of studies that have investigated the efficacy of pharmacological and psychological treatment strategies. Many studies have demonstrated efficacy of various medications (including selective serotonin reuptake inhibitors) and psychotherapies (including cognitive behavioural therapy) available. What is lacking is an understanding of the best treatment combinations, the long-term treatment outcomes and the durability of response and remission. Furthermore, we don't yet have a clear picture of which patients will do best and with what treatment. Strawn *et al.* explain that these questions constitute essential areas for further research over the next decade.

"The last 5 years have seen an acceleration in research related to risk, neurobiology and treatment of anxiety disorders, which will almost certainly be translated into better, more effective and more personalized treatments for children and adolescents with anxiety disorders," says Strawn. "Until recently, anxiety was often underappreciated in terms of its impact, its developmental significance and its morbidity. For many, anxiety was contextualized as 'normal' or 'a phase'. Now, clinicians, policymakers, teachers and others working with youth increasingly appreciate its significance."

### Referring to:

Strawn, J.R., Lu, L., Peris, T.S., Levine, A. & Walkup, J.T. (2020), *Research Review: Pediatric anxiety disorders – what have we learnt in the last 10 years?* *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13262

### References:

<sup>1</sup> Kessler RC, Berglund P, Demler O, Jin R, Merikangas KR, Walters EE. Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the National Comorbidity Survey Replication. *Arch Gen Psychiatry* 2005; 62: 593.

<sup>2</sup> Merikangas KR, He J, Burstein M, et al. Lifetime prevalence of mental disorders in US adolescents: results from the National Comorbidity Survey Replication–Adolescent Supplement (NCS-A). *J Am Acad Child Adolesc Psychiatry* 2010; 49: 980–9.

### Glossary:

**Cognitive behavioural therapy:** a form of talking therapy that encourages patients to adapt the way they think and behave to improve the way they feel. CBT is based on the concept that thoughts, behaviour and feelings are interconnected. CBT tends to focus on current problems and finds practical ways to change negative patterns, in order to develop more helpful strategies of addressing these problems.

**Generalized anxiety disorder:** characterized by excessive diffuse anxiety, accompanied by difficulty sleeping, poor concentration, irritability, fatigue and muscle tension.

**Selective serotonin reuptake inhibitors:** a class of medication that is used in the treatment of anxiety and depressive disorders. These drugs increase serotonin levels in the brain by limiting its reuptake into cells. The effect is an increased level of serotonin available to bind with receptors.

**Separation anxiety disorder:** characterized by excessive distress experienced by a child when separated (or anticipating being separated) from their attachment figures. Therefore, the child usually seeks to be close to their attachment figures.

**Social anxiety disorder:** characterized by self-consciousness and intense anxiety in social situations, with worry or fear about being negatively judged or embarrassed. Consequently, the person often tries to escape from or avoid social situations.

**Specific phobia:** characterized by excessive fear of a particular situation or focus. As a result, the person often tries to escape from or avoid the feared situation/focus.

**Panic disorder:** characterized by panic attacks, which are discrete, rapid-onset and intense periods of distressing anxiety, including somatic symptoms (e.g. palpitations, feeling short of breath, or trembling) and cognitive symptoms (e.g. thoughts that "I'm going to die").

# How common and costly is persistent health anxiety in young people?

By Dr. Jessica Edwards

Health anxiety – characterized by excessive and impairing worry about health issues<sup>1</sup> – has been minimally described in childhood and adolescence, and longitudinal studies are lacking. Yet preliminary reports suggest that health anxiety might be on the rise in the general population.<sup>2</sup> Now, researchers in Denmark have conducted a prospective population-based cohort study to shed light on the prevalence and costs associated with health anxiety in youths.

Martin Rimvall and colleagues investigated whether high levels of health anxiety in young people confers a “real life” impact on physical health service use, which might maintain and potentially worsen health anxiety symptoms for the individual, as well as increase healthcare costs.

The researchers studied 1,278 youths followed-up during childhood and adolescence. They assessed health anxiety, chronic somatic illnesses (e.g. epilepsy, diabetes), emotional disorders (e.g. depression, anxiety) and functional somatic symptoms at age 11, and health anxiety at age 16. They also obtained register-based data on the costs related to non-hospital-based primary and secondary somatic health services between age 11 and 16.

They found that girls and children with a chronic somatic illness at age 11 were at the highest risk of health anxiety at age 16, after accounting for all other age 11 measures. While persistence of high health anxiety levels from childhood into adolescence was rare (1.3%), those affected were high users of healthcare services, with almost double the healthcare costs than those with consistently low health anxiety levels. Importantly, these costs were not as a result of a chronic somatic illness.

“Because the study shows that health anxiety is not always a passing phenomenon, and because it has real-life functional impact pertaining to youths, development of interventions directed at preventing and treating health anxiety in younger age groups are needed”, proposes Rimvall. “Although therapeutic interventions directed at health anxiety are efficient in adults, we cannot assume that they will simply be applicable to children and adolescents”.

Going forward, Rimvall *et al.* explain that paediatricians, general practitioners and other healthcare professionals who work with youths with physical illness should be aware of psychological health issues and the potential development of health anxiety among their patients. “The diagnosis of severe health anxiety, i.e. hypochondriasis, is based on adult populations”, explains Rimvall. “The possibility of applying this diagnosis to children and adolescents must now be explored so that we can start to develop targeted, early interventions”.

*The authors would like to acknowledge the National Institute of Mental Health for funding the original study.*



## Referring to:

Rimvall, M.K., Jeppesen, P., Skovgaard, A.M., Verhulst, F., Olsen, E.M. & Rask, C.U. (2020), *Continuity of health anxiety from childhood to adolescence and associated healthcare costs: a prospective population-based cohort study*. *J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13286.

## References:

<sup>1</sup> Asmundson, G.J.G., *et al.* (2010). *Health anxiety: Current perspectives and future directions*. *Curr. Psychiatry Rep.* 12, 306–312. doi: 10.1007/s11920-010-0123-9.

<sup>2</sup> Tyrer, P. *et al.* (2019). *Increase in the prevalence of health anxiety in medical clinics: Possible cyberchondria*. *Int. J. Soc. Psychiatry.* 65, 566–569. doi: 10.1177/0020764019866231.

## Glossary:

**Functional somatic symptoms:** physical symptoms which cannot be attributed to an identifiable disease even after extensive medical assessment.

# Does having both ADHD and irritability symptoms in childhood predict mental health outcomes in adolescence?

By Dr. Jessica Edwards

Attention-deficit/hyperactivity disorder (ADHD) symptoms combined with high levels of irritability during childhood is a significant predictor of subsequent mental health problems and suicidality in adolescence, according to findings from a new study. To draw this conclusion, Cedric Galera and colleagues followed >1,400 children from the general population who were enrolled in the Québec Longitudinal Study of Child Development. First, they identified the developmental trajectories of childhood ADHD and irritability symptoms between the ages of 6 and 12 years. They then analysed whether these trajectories were associated with psychiatric symptoms, functional impairment and suicidal ideation or attempts between 13 and 17 years of age.

The researchers identified distinct childhood developmental profiles, as follows: absent/very low ADHD and irritability (which affected 67% of the cohort), moderately high irritability and low ADHD (11%), moderately high ADHD and low irritability (14%), and both high ADHD and high irritability (8%). During adolescence, participants with high childhood ADHD and irritability had higher levels of ADHD symptoms, externalizing and internalizing symptoms, and functional impairment, compared to all three other groups. They were also more likely to experience suicidality than the first two groups.

Galera *et al.* explain that more children from lower socioeconomic backgrounds were lost to follow up, so their study sample likely represents young people at lower risk and the observed associations might be underestimates. However, pending replication of these findings, the researchers believe that there is still good reason for clinicians to consider irritability symptoms when diagnosing and assessing ADHD. Further studies are now warranted to determine whether decreasing childhood irritability might improve adolescent mental health and suicidal outcomes in children with ADHD.

## Referring to:

Galera, C., Orri, M., Vergunst, F., Melchior, M., Van der Waeden, J., Bouvard, M.P., Collet, O., Boivin, M., Tremblay, R.E. & Côté, S.M. (2020), *Developmental profiles of childhood attention-deficit/hyperactivity disorder and irritability: association with adolescent mental health, functional impairment, and suicidal outcomes. J. Child Psychol. Psychiatr.* doi: 10.1111/jcpp.13270.

## Glossary:

**Internalizing symptoms:** emotional symptoms which tend to be experienced internally. In this study the internalizing symptoms assessed included social phobia, generalized anxiety, and depression symptoms.

**Externalizing symptoms:** maladaptive behaviours which are directed externally towards the environment. In this study the externalizing symptoms assessed included oppositional defiant disorder, conduct disorder, psychopathy, delinquency and contact with police, and aggression symptoms.

**Functional impairment:** limitations to daily life and usual roles. For example, difficulty completing school-work or socializing with friends.

